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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/747,988	12/27/2000	Morinobu Endoh	107348-00047	3626
7590 05/05/2004				
ARENT FOX KINTNER PLOTKIN & KAHN, PLLC Suite 600 1050 Connecticut Avenue, N.W. Washington, DC 20036-5339			EXAMINER LISH, PETER J	
			ART UNIT 1754	PAPER NUMBER

DATE MAILED: 05/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/747,988

Applicant(s)

ENDOH ET AL.

Examiner

Peter J Lish

Art Unit

1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 8-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Response to Arguments***

Applicant's arguments filed 3/1/04 have been fully considered but they are not persuasive. The applicant claims an activated carbon having a specific electrostatic capacity density. It is noted however, that the electrostatic capacity, which is used to calculate this limitation, is measured from an electric double layer capacitor in which the activated carbon is formed into electrodes and the electrodes incorporated into the capacitor. The specification contains no description on the assembly of the electrodes or the capacitor. It is thus unclear as to what binder was used to form the electrodes, whether additives were used in the electrodes, what type of electrolyte was used in the capacitor, and what voltage was used in the measurement, all of which may have an effect on the electrostatic capacity. It is thus considered that while an electrostatic capacity density within the range claimed by the applicants is not explicitly taught, it is expected that the activated carbon of the prior art of reference, which is produced by an equivalent process, will achieve an equivalent electrostatic capacity density if applied in a manner identical to applicant.

Applicants additionally argue that the process of Sato is not equivalent to the process of the claimed invention by arguing toward an infusibilization step used in examples III and IV. However, it is noted that the applicant's example relied upon in the rejection of the previous office action is example V.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

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The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 8-10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

It is noted that the electrostatic capacity is measured from an electrostatic capacitor containing electrodes that contain the activated carbon of the presently claimed invention. This value, therefore, is not a property of the activated carbon alone, but relies upon factors stemming from the manufacture of the electrodes and the capacitor. There is no discussion of the formation of the electrodes or the capacitor itself, thus there is a lack of written description dealing with the measurement of this claimed property.

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 8-10 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Adachi et al. (USPN 5,430,606).

Adachi discloses carbon electrodes for a double layer capacitor which are capable of storing high energy per unit volume so that small-sized capacitors with increased capacity can be fabricated. Adachi discloses an activated carbon electrode which has a capacitance per unit volume, or electrostatic capacity density, of greater than 80 F/cc, and also greater than 100 or 120 F/cc, while also having a specific surface area of less than 1,500 m²/g. Adachi teaches that the activated carbon precursor may be any carbonaceous material generally used for the manufacture of activated carbon. As examples, Adachi includes coconut shells, wood flour, coal, or resins. Adachi specifically uses phenolic resin, which is similarly used in the instantly claimed invention. Because the electrostatic capacity density and the surface areas of the activated carbon of Adachi et al. fit within the claimed ranges of the applicant, and because these properties are used to calculate the rate of edge faces, it is expected that the activated carbon of Adachi et al. have a rate of edge faces within the claimed range of applicants.

While the carbon precursor of Adachi et al. is not explicitly taught to be mesophase pitch, the use of a specific precursor in the formation of the activated carbon is viewed to be a product by process limitation. No difference is seen between the activated carbon of Adachi et al. and that of the instantly claimed invention. It is held that when the prior art discloses a product

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which reasonably appears to be either identical with or only slightly different than a product claimed in a product-by-process claim, a rejection based alternatively on either section 102 or section 103 of the statute is eminently fair and acceptable. The burden to show a different product is thereby shifted to the applicant, as the Patent Office is not equipped to manufacture products by the myriad of processes put before it and then obtain prior art products and make physical comparisons therewith. See *In re Brown*, 173 USPQ 685, 688 and *In re Fessman*, 180 USPQ 324.

Claims 8-10 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Sato et al. (JP 10149958 A).

For reference, US Patent 5,877,935, which consists of the same disclosure, is used as a translation of the Japanese document published 06/02/1998.

Sato et al. disclose the production of an activated carbon for use in an electric double-layer capacitor. The production involves carbonizing, pulverizing, and activating an easily graphitizable organic substance, such as mesophase pitch and vinyl chloride resins (column 7, lines 36-45). The preferred vinyl chloride is carbonized at a range of between 425 and 1,000 °C, and preferably near 600 °C (column 8, lines 59-65). The carbonized product is then ground into particles having a particle size of 1-100 microns. Potassium hydroxide is mixed in a proportion of 2 parts by weight per 1 part by weight of this carbonized product. The mixture is then heated for 3 hours at 800 °C in a nitrogen gas stream to conduct the alkali activation (column 8, lines 20-25). It is seen that various heating times and temperatures are used which are within the ranges of between 3-5 hours and 800 and 900 °C. Because the activated carbon of Sato et al. is produced in a manner identical to that of the applicant (see example V of present application), it

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is expected that the properties of the activated carbon produced by Sato et al. are identical to those claimed by applicant.

Because no difference is seen between the process used to form the activated carbon of Sato et al. and the process of the instantly claimed invention, it is expected that the activated carbon will have equivalent properties. Although the electrostatic capacity density is not explicitly taught to be within the range claimed by the applicant, it is expected that the activated carbon itself, if used in an electrode and capacitor identical to the activated carbon of the applicant, will achieve an electrostatic capacity density within the claimed range.

Claims 8-10 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Maeda et al. (US 6,118,650).

Maeda et al. teaches a process for the production of activated carbon from mesophase pitch. Maeda teaches that the pitch is infusibilized at a temperature between 100 and 350 °C with a heating rate of between 1 and 15 °C per minute. It is then carbonized at a temperature preferably between 400 and 700 °C. The carbon fiber is then pulverized and mixed with potassium hydroxide, the potassium hydroxide being in an amount of between 1.5 and 3 times the weight of the carbon fibers. They are then heated to between 500 and 900 °C, preferably between 600 and 800 °C in an inert gas, such as nitrogen. The example teaches an activated treatment of 700 °C for 7 hours. Because the activated carbon of Maeda et al. is produced in a manner equivalent to that of the applicant (see example IV of present application), it is expected that the properties of the activated carbon produced by Sato et al. are equivalent to those claimed by applicant.

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Because no difference is seen between the process used to form the activated carbon of Maeda et al. and the process of the instantly claimed invention, it is expected that the activated carbon will have equivalent properties. Although the electrostatic capacity density is not explicitly taught to be within the range claimed by the applicant, it is expected that the activated carbon itself, if used in an electrode and capacitor identical to the activated carbon of the applicant, will achieve an electrostatic capacity density within the claimed range.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter J Lish whose telephone number is 571-272-1354. The examiner can normally be reached on 9:00-6:00 Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



PL

STUART L. HENDRICKSON
PRIMARY EXAMINER